

CLAIMS

What is claimed is:

1. A content reproducing apparatus, comprising:
a data storage unit storing and/or reading data; and
a presentation engine controlling the data storage unit according to a command program contained in an input markup document.
2. The content reproducing apparatus of claim 1, wherein the presentation engine comprises:
a parser verifying a syntax of the markup document;
a document object model (DOM) tree forming unit receiving the markup document from the parser, interpreting a structure of the markup document, and extracting the command program; and
an interpreter receiving the extracted command program from the DOM tree forming unit to control the data storage unit.
3. The content reproducing apparatus of claim 1, wherein the command program is written in a script language.
4. The content reproducing apparatus of claim 1, wherein, according to the command program, the presentation engine generates cookie information comprising predetermined target information and stores the cookie information in the data storage unit.
5. The content reproducing apparatus of claim 4, wherein the data storage unit comprises a non-volatile data storage portion and a volatile data storage portion, where according to cookie storage attribute information in the command program, the presentation engine stores the cookie information in one of the non-volatile data storage portion and the volatile data storage portion.
6. The content reproducing apparatus of claim 4, wherein the presentation engine incorporates content identification information into the cookie information and stores the cookie information in the data storage unit.

7. The content reproducing apparatus of claim 6, wherein the presentation engine searches the data storage unit for the cookie information with the same content identification information as input content identification information and reads the cookie information.

8. The content reproducing apparatus of claim 4, further comprising:
a decoder decoding a read content,
wherein the command program is a command program which commands that predetermined target information be fetched from the decoder, commands the cookie information comprising the predetermined target information be generated, and commands the generated cookie information be stored in the data storage unit.

9. The content reproducing apparatus of claim 4, wherein the command program is a command program which commands that the cookie information comprising predetermined target information be generated and commands the generated cookie information be stored in the data storage unit.

10. The content reproducing apparatus of claim 4, wherein the presentation engine receives data from a user, and the command program is a command program which commands that the cookie information comprising predetermined target information in the input data from the user be generated, and commands the generated cookie information be stored in the data storage unit.

11. The content reproducing apparatus of claim 1, wherein the command program comprises a cookie reference command program, where according to the cookie reference command program, the presentation engine searches the data storage unit for at least one cookie information item, and extracts the predetermined target information from the at least one cookie information item.

12. The content reproducing apparatus of claim 1, wherein the command program comprises a cookie deletion command program, where according to the cookie deletion command program, the presentation engine searches the data storage unit for at least one cookie information item and deletes corresponding cookie information.

13. The content reproducing apparatus of claim 4, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

14. The content reproducing apparatus of claim 5, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

15. The content reproducing apparatus of claim 6, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

16. The content reproducing apparatus of claim 7, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

17. The content reproducing apparatus of claim 8, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

18. The content reproducing apparatus of claim 9, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

19. The content reproducing apparatus of claim 10, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

20. The content reproducing apparatus of claim 11, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

21. The content reproducing apparatus of claim 12, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, and the target information comprises a name identifying the target information and a value of the target information.

22. The content reproducing apparatus of claim 13, wherein the cookie information further comprises third information defining a duration of the cookie information.

23. The content reproducing apparatus of claim 13, wherein if cookie information having the same first information and second information, and the same name to identify the target information as the cookie information generated according to the cookie generation command program exists in the data storage unit, the presentation engine overwrites the cookie information in the data storage unit with the generated cookie information.

24. The content reproducing apparatus of claim 11, wherein, according to the cookie reference command program, the presentation engine searches the data storage unit for at least one cookie information item with predetermined content identification information and extracts the predetermined target information from the at least one cookie information item.

25. The content reproducing apparatus of claim 24, wherein the presentation engine searches for the cookie information having the same name to identify the target information as in the command program.

26. A content reproducing method, comprising:
receiving a markup document comprising a predetermined command program;
parsing to verify a syntax of the markup document;
extracting the command program by interpreting a structure of the markup document;
and
controlling a data storage unit according to the command program.

27. The content reproducing method of claim 26, wherein the command program is written in a script language.

28. The content reproducing method of claim 26, wherein the controlling of the data storage unit comprises:
according to the command program, generating cookie information; and
storing the generated cookie information in the data storage unit.

29. The content reproducing method of claim 28, wherein in the storing of the generated cookie information, the generated cookie information is stored in one of a non-volatile data storage portion and a volatile data storage portion of the data storage unit according to a cookie storage attribute value in the command program.

30. The content reproducing method of claim 28, wherein the generation of the cookie information comprises incorporating content identification information into the cookie information.

31. The content reproducing method of claim 28, wherein the generation of the cookie information comprising fetching predetermined target information from a decoder decoding AV data.

32. The content reproducing method of claim 28, wherein in the generation of the cookie information, cookie information with predetermined target information in the markup document is generated.

33. The content reproducing method of claim 28, further comprising:
receiving data from a user before the controlling of the data storage unit, wherein in the generation of the cookie information, the cookie information with predetermined target information in the data received from the user is generated.

34. The content reproducing method of claim 26, wherein the command program comprises a cookie reference command program, and the controlling of the data storage unit comprises:

according to the cookie reference command program, searching the data storage unit for at least one cookie information item; and

extracting predetermined target information from the at least one cookie information item.

35. The content reproducing method of claim 26, wherein the command program comprises a cookie deletion command program, and the controlling of the data storage unit comprises:

according to the cookie deletion command program, searching the data storage medium for at least one cookie information item that matches the cookie information the cookie deletion command program commands to delete; and

deleting the at least one cookie information item.

36. The content reproducing method of claim 26, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

37. The content reproducing method of claim 27, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

38. The content reproducing method of claim 28, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

39. The content reproducing method of claim 29, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

40. The content reproducing method of claim 30, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

41. The content reproducing method of claim 31, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

42. The content reproducing method of claim 32, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

43. The content reproducing method of claim 33, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

44. The content reproducing method of claim 34, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

45. The content reproducing method of claim 25, wherein the cookie information comprises at least first information defining a content reproducing apparatus using the cookie information, and second information indicating a path of a markup document using the target information, where the target information is a pair of a name identifying the target information and a value of the target information.

46. The content reproducing method of claim 36, wherein the cookie information further comprises third information defining a duration of the cookie information.

47. The content reproducing method of claim 36, wherein in the storing of the generated cookie information, if the cookie information has the same first information and second information, and the same name to identify the target information as the cookie information generated according to the command program exists in the data storage unit, the cookie information in the data storage unit is overwritten with the generated cookie information.

48. The content reproducing method of claim 34, wherein in the search of the at least one cookie information item, at least one cookie information item with predetermined content identification information is searched through the data storage unit according to the cookie reference command program.

49. The content reproducing method of claim 48, wherein in the search of the at least one cookie information item, at least one cookie information item having a name to identify the target information is searched.

50. A content reproducing method of a data storage unit, comprising:
receiving content;
searching for cookie information with content identification information that matches identification information in the received content; and
reading predetermined target information in the cookie information.

51. The content reproducing method of claim 50, wherein cookie information items stored in the data storage unit, among which the cookie information is searched, are generated according to a command program where the cookie information items comprise content identification information and predetermined target information, and the cookie information items are stored in one of a non-volatile data storage portion and a volatile data storage portion of the data storage unit according to a cookie storage attribute value in the command program.

52. An information storage medium of a content reproducing apparatus comprising a data storage medium and a decoder, the information storage medium comprising:
audio/video (AV) data and a markup document reproducing the AV data, the markup document comprising a command program to control the data storage unit of the content reproducing apparatus.

53. The information storage medium of claim 52, wherein the command program comprises content identification information.

54. The information storage medium of claim 52, wherein the command program is written in a script language.

55. The information storage medium of claim 52, wherein the command program comprises a cookie generation command program, where the cookie generation command program performs control so that the content reproducing apparatus generates cookie information comprising predetermined target information and stores the cookie information in the data storage unit.

56. The information storage medium of claim 55, wherein the data storage unit comprises a non-volatile data storage portion and/or a volatile data storage portion, and the cookie generation command program performs a control according to cookie storage attribute information in the cookie generation command program, where the content reproducing apparatus stores the cookie information in one of the non-volatile data storage portion and the volatile data storage portion.

57. The information storage medium of claim 56, wherein the cookie generation command program performs a control so that the content reproducing apparatus generates cookie information comprising content identification information and stores the cookie information in the data storage unit.

58. The information storage medium of claim 55, wherein the cookie generation command program performs a control so that the content reproducing apparatus generates cookie information comprising predetermined target information fetched from the decoder decoding the AV data and stores the cookie information in the data storage unit.

59. The information storage medium of claim 55, wherein the cookie generation command program performs a control so that the content reproducing apparatus generates cookie information comprising predetermined target information in the markup document.

60. The information storage medium of claim 55, wherein the cookie generation command program performs a control so that the content reproducing apparatus generates cookie information comprising predetermined target information in data input from a user and stores the cookie information in the data storage unit.

61. The information storage medium of claim 52, wherein the command program comprises a cookie reference command program, where the cookie reference command program performs control so that the content reproducing apparatus searches the data storage unit for at least one cookie information item and extracts predetermined target information from the at least one cookie information item.

62. The information storage medium of claim 52, wherein the command program comprises a cookie deletion command program, where the cookie deletion command program performs control so that the content reproducing apparatus searches the data storage unit for at least one cookie information item that matches the cookie information the cookie deletion command program commands to delete and deletes the at least one cookie information.

63. The information storage medium of claim 55, wherein the cookie generation command program performs control so that the content reproducing apparatus generates cookie information comprising first information defining the content reproducing apparatus using the cookie information, second information indicating a path of a markup document using the target information, and the target information, which is a name identifying the target information and a value of the target information.

64. The information storage medium of claim 63, wherein the cookie generation command program performs control so that the content producing apparatus generates the cookie information further comprising third information defining a duration of cookie information.

65. The information storage medium of claim 62, wherein the cookie information comprises first information defining the content reproducing apparatus using the cookie information, second information indicating a path of a markup document using the target information, and the target information, which is a name identifying the target information and a value of the target information, and the cookie reference command program performs control to search for the cookie information having the same first information, second information, and the name identifying the target information as in the cookie reference command program and to extract the value of the target information.

66. The information storage medium of claim 62, wherein the cookie information comprises first information defining the content reproducing apparatus using the cookie information, second information indicating a path of a markup document using the target information, and the target information, which is a name identifying the target information and a value of the target information, and the cookie deletion command program performs control to search for the cookie information having the same first information, second information, and the name identifying the target information as in the command program and to delete the searched cookie information.

67. A computer readable medium of a data storage unit having embodied thereon a program for a content reproducing method, comprising:

- receiving a markup document comprising a predetermined command program;
- parsing to verify a syntax of the markup document;
- extracting the command program by interpreting a structure of the markup document;

and

- controlling the data storage unit according to the command program.